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APPLICANT: BRANDES, RAYMOND V.
APPLICATION #: 10/~~624,152~~ 10677580
FILED: October 2, 2003
FOR: ANNULAR ONE-WAY VALVE

ART UNIT: 3753
EXAMINER: RAMESH KRISHNAMURTHY

APPEAL BRIEF OF PETITIONERS

Pursuant to 37 CFR §41.37, the Petitioners, Raymond Brandes hereby serve their Appeal Brief.

I. REAL PARTY IN INTEREST

The Applicant in this matter is Raymond V. Brandes. As the Applicant has not assigned any rights in this invention, he is the real parties in interest.

II. RELATED APPEALS AND INTERFERENCES

To the knowledge of Applicant, there are presently no related appeals or interferences.

III. STATUS OF THE CLAIMS

Claims 1 – 11 of the pending application currently stand rejected. Petitioner is appealing the decisions as to each and every rejected claim. A listing of the status of each and every pending claim is as follows:

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02 FC:2402 250.00 OP

1. Rejected.
2. Rejected.
3. Rejected.

4. Rejected.

5. Rejected.

6. Rejected.

7. Rejected.

8. Rejected.

9. Rejected.

10. Rejected.

11. Rejected.

The Rejection as to each and every rejected claim is appealed.

IV. STATUS OF AMENDMENTS

Applicant has not submitted any amendments subsequent to final rejection.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The invention relates to the field of fluid control. The invention comprises a one-way valve with an annular nozzle. The valve body is a truncated cone with an interior fluid manifold. The truncated cone section includes a lower retaining groove and a fluid groove. A fluid conduit connects the interior fluid manifold to the fluid groove. An elastic cylinder having an internal diameter which is smaller than the truncated cone is slipped over the truncated cone. The lower portion of the elastic cylinder slips into the retaining groove. The upper portion rests over the fluid groove. When fluid pressure within the interior fluid manifold exceeds the pressure outside the valve, fluid flows through the conduit and into the fluid groove. This pressure urges the upper portion of the elastic cylinder away from the truncated cone. Fluid then flows out through an annular nozzle formed between the upper portion of the elastic cylinder and the upper portion of the truncated cone. When pressure outside the valve exceeds the fluid pressure within the interior fluid manifold, the elastic cylinder is clamped tightly against the truncated cone, thereby preventing flow back through the valve. In this fashion, flow is only permitted in one direction. Because the valve includes no cavities downstream of the "check" feature, no unwanted fluid is retained within the valve.

In the following section, the Applicant attempts to comply with 37 CFR §41.37(c)(v.). There is one independent claim presented in this appeal – Claim 1. Claim 1 is stated again below, with annotations to the reference numbers and drawings figures from the original specification.

1. A fluid control valve, comprising:
   - a. a truncated cone (illustrated in FIGs. 1, 3, 4, 5, 6, and 8, reference numeral **12**; page 1, column 2, lines 35-37; also discussed on page 2, column 2, lines 9-11), having a first end and a second end, wherein said first end is larger than said second end;
   - b. a retaining groove (illustrated in FIGs. 1 and 4, reference numeral **16**; page 1, column 2, lines 37-40), proximate said first end of said truncated cone;
   - c. a fluid groove (illustrated in FIGs. 1, 2, 4, 5 and 7, reference numeral **18**; page 1, column 2, lines 38-40 and lines 49-50; also discussed on page 2, column 1, lines1-3), between said retaining groove and said second end of said truncated cone;
   - d. a fluid manifold (illustrated in FIGs. 2, 4 and 5, reference numeral **28**; page 1, column 2, lines 47-50 and line 72) inside said truncated cone;
   - e. a conduit (FIGs. 1, 2, 4, and 5, reference numeral **20**; page 1, column 2, line 49

and lines 71-72; also discussed on page 2, column 1, lines 56-60) connecting said fluid manifold and said fluid groove; and

f. a hollow elastic cylinder (FIGs. 1, 3, 4, 6 and 8, reference numeral 14; page 1, column 2, lines 42, and lines 53-60; also discussed on page 2, column 1, lines 1-4 and lines 66-70; also discussed on page 2, column 2, lines 3-18), having a first end and a second end, and being sized to fit tightly over said truncated cone, wherein said second end lies tightly against said second end of said truncated cone, thereby forming an annular nozzle between said hollow elastic cylinder and said truncated cone.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 1 – 5, 7 – 9 and 11 are anticipated by U.S. Patent No. 6,848,471 to Floh et. al. and therefore are unpatentable under 35 U.S.C. §102(e).

2. Whether claims 1, 2, 4, 5, 7, 8 and 11 are rendered obvious over U.S. Patent No. 5,836,484 to Gerber in view of U.S. RE. 34,243 to Gerber and therefore are unpatentable under 35 U.S.C. §103(a).

3. Whether claims 3 and 9 are rendered obvious over the combination of U.S. Patent 5,836,484 to Gerber and U.S. RE. 34,243 to Gerber and in further view of U.S. Patent No. 6,848,471 to Flow et.al. and therefore unpatentable under 35 U.S.C. §103(a).

4. Whether claims 6 and 10 are rendered obvious over the combination of U.S. Patent No. 5,836,484 to Gerber and U.S. RE. 34,243 and further in view of U.S. Patent No. 4,250,844 to Tews and therefore unpatentable under 35 U.S.C. §103(a).

5. Whether claims 6 and 10 are rendered obvious over U.S. Patent No. 6,848,471 to Flow et al. in view of U.S. Patent No. 4,250,844 to Tews and therefore are unpatentable

under 35 U.S.C. §103(a).

VII. ARGUMENT

A. Claims 1 – 5, 7 – 9 and 11 are not anticipated by Floh et.al (U.S. Patent No. 6,848,471)

Claims 1 – 5, 7 – 9 and 11 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,848,471 to Floh et.al.(2005).

In order for a section 102 reference to be valid as prior art, every element and limitation of the claimed present invention – as literally defined in the claims - must be disclosed within the piece of prior art. *Jamesbury Corp. v. Litton Indus. Products*, 756 F.2d 1556, 225 USPQ 253 (Fed.Cir. 1985); *Atlas Powder Company v. du Pont*, 750 F.2d 1569 (Fed.Cir. 1984); *American Hospital Supply v. Travenol Labs*, 745 F.2d 1 (Fed.Cir. 1984).

The patent to Floh et al. does not teach or describe several of the significant features of Petitioner's invention which are recited in Claim 1. Floh et al's "spigot" (24) has substantially parallel sidewalls and then a sloping "shoulder" (42) near the outlet end. Petitioner submits that while it is proper to classify the sloping shoulder portion (42) of the spigot as a "truncated cone," the remainder of the spigot (the portion spanning between the inlet and sloping shoulder 42) does not have the geometry of a truncated cone. Although the geometry of Floh et al's shoulder portion (42) of the spigot has the geometry of a truncated cone, Floh et al. does not disclose other material limitations of Claim 1 and does not realize the advantages of Petitioner's truncated cone geometry.

First, claim 1 recites the limitation of a truncated cone having a first end and a second end ***wherein said first end is larger than said second end.*** The "first end" is more particularly defined in the claim as the end ***proximate the retaining groove*** (see Claim 1, element b). The

Examiner cites ridge (40) for teaching Petitioner's "retaining groove." The "first end" of Floh et al.'s truncated cone (i.e. the end that is closer to the retaining groove) is smaller than the "second end" of the truncated cone. Accordingly, Floh et al. does not teach the limitation "wherein said first end is larger than said second end."

Also, Floh et al. does not disclose "a fluid manifold inside said truncated cone." As referenced above, it is not proper to classify the entirety of Floh et al.'s spigot (24) as a truncated cone – only sloping shoulder 42 has this geometry. As illustrated in FIG. 2 and FIG. 3 of the Floh et al. patent, the fluid manifold (bore inside spigot 24) does not extend into the sloping shoulder. Accordingly, the fluid manifold is not ***inside the truncated cone***.

Examiner argues that "Floh et al. discloses...a fluid groove (48) between said retaining groove and said second end of said truncated Cone." Examiner also argues that "Floh et al. discloses...a conduit (radial grooves connecting the groove (48) to the internal bore within (24)) connecting said fluid manifold and said fluid groove." Examiner is utilizing Floh et al.'s vent apertures (48) as both a disclosure for Petitioner's conduit and for Petitioner's fluid groove. Floh et al.'s vent apertures (48) do not disclose "a fluid groove" as disclosed in Claim 1(c) by Petitioner. Petitioner's "fluid groove" is illustrated in FIG.'s 1, 2, 4, and 5, as encircling the truncated cone. As described by Petitioner, the "pressure is transmitted through fluid manifold, conduit and ***around*** fluid groove" [emphasis added]. The vent apertures (48), as described in the Floh et al patent, "extend from the interior of the internal spigot towards the outer periphery thereof." As illustrated in FIG. 2 and FIG. 3 of the Floh et al. patent the vent apertures (48) are holes, spaced 90 degrees apart, which tunnel through the internal spigot (24).

The aforementioned limitations which are not disclosed by the Floh et al. patent are material to the advantages realized by Petitioner's invention. For example, Petitioner's use of a truncated cone geometry forces all fluid to flow toward the narrow end of the truncated cone. As described in Petitioner's specification, "the shape of the truncated cone dictates that the part of elastic cylinder 14 lying above fluid groove 18...is less tightly stretched than the portion lying below fluid groove 18. Thus, the fluid travels upward, deflecting that portion of elastic cylinder 14 away from truncated cone 12." (Published Patent Application U.S. 2005/0072480, page 1, column 2, line 73 continued to page 2, column 1, lines 1-5). Also, the simplicity of Petitioner's device allows it to be manufactured and assembled more easily and at lower cost than the prior art nozzles.

B. Claims 1, 2, 4, 5, 7, 8 and 11 are not rendered obvious over Gerber (U.S. 5,836,484) in view of Gerber (US RE 34,243)

Claims 1, 2, 4, 5, 7, 8, and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gerber (U.S. 5,836,484) in view of Gerber (US RE 34,243). Petitioner has reviewed these patents and respectfully disagrees.

A prior art reference does not create a case of prima facie obviousness if it fails to disclose a material element or limitation claimed in the present invention. *In re Evanega*, 829 F.2d 1110 (Fed. Cir. 1987).

The patent to Gerber does not teach or describe several of the significant features of Petitioner's invention which are recited in Claim 1. First, the patent to Gerber does not teach the use of Petitioner's "truncated cone." Gerber's "delivery block" (30) has substantially vertical sidewalls and then a region that tapers to a neck. The geometry of Gerber's delivery block is not that of a truncated cone and does not provide the advantages of Petitioner's truncated cone geometry. For example, Petitioner's use of a truncated cone geometry forces all fluid to flow toward the narrow end of the truncated cone. As described in Petitioner's specification, "the shape of the truncated cone dictates that the part of elastic cylinder 14 lying above fluid groove 18... is less tightly stretched than the portion lying below fluid groove 18. Thus, the fluid travels upward, deflecting that portion of elastic cylinder 14 away from truncated cone 12." (Published Patent Application U.S. 2005/0072480, page 5, lines 17-21) Gerber's delivery block does not achieve this goal of nonuniform deformation of the elastic cylinder. Instead of relying on nonuniform deformation to control fluid flow, Gerber employs protrusion (50) to prevent fluid from flowing the wrong direction.

Furthermore, even if the "sloping" portion of delivery block 30 may be considered a truncated cone, the fluid manifold (34) is not inside or within the sloping portion of delivery block. Accordingly, the limitation recited in part d of Petitioner's claim 1 is not taught or disclosed by Gerber.

In addition, Gerber does not teach Petitioner's "fluid groove." The Examiner referred to the sleeve valves (46 and 48) lying at the end of both branches Gerber's internal conduit. These structures are simply outlet ports of the internal conduit corresponding to Petitioner's conduit element. The Examiner correctly pointed out that Gerber utilizes a retaining "groove" (52), but Gerber does not describe a second groove "between said retaining groove and said second end of said truncated cone" as recited in Claim 1.

None of the prior art references cited, or any other reference known to the Petitioner, describes or suggests these features.

C. Claims 3 and 9 are not rendered obvious over the combination of Gerber (U.S. 5,836,484) and Gerber (RE 34,243) in view of Floh et al. (U.S. 6,848,471)

Claims 3 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gerber (US 5,836,484) and Gerber (US RE 34,243) as applied to claims 1, 2, 4, 5, 7, 8 and 11, and further in view of Floh et al. (US 6,848,471). Claims 1, 2, 4, 5, 7, 8 and 11 are not rendered obvious over the combination Gerber (US 5,836,484) and Gerber (RE 34,243). Therefore claim 3 and 9 should also be allowed since they depend upon claim 1 and 2.

D. Claims 6 and 10 are not rendered obvious over the combination of Gerber (U.S. 5,836,484) and Gerber (RE. 34,243) in view of Tews (U.S. 4,250,844)

Claims 6 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gerber (US 5,836,484) and Gerber (US RE 34,243) as applied to claims 1, 2, 4, 5, 7, 8 and 11, and further in view of Tews (US 4,250,844). Claim 1, 2, 4, 5, 7, 8 and 11 are not rendered obvious over the combination Gerber (US 5,836,484) and Gerber (RE 34,243). Therefore claim 6 and 10 should also be allowed since they depend upon claim 1.

E. Claims 6 and 10 are not rendered obvious over Floh et al. (U.S. 6,848,471) and Tews (U.S. 4,250,844)

Claims 6 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Floh et al. (US 6,848,471) as applied to claims 1 – 5, 7 – 9 and 11, and further in view of Tews (US 4,250,844). Floh et al. does not disclose the claimed invention disclosed in claims 1 – 5, 7 – 9 and 11. Therefore claim 6 and 10 should also be allowed since they depend upon claim 1.

In view of the prior arguments and citations of authority the Petitioner believes that the claims are in condition for allowance.

WHEREFORE, the Applicant hereby requests that the Board of Patent Appeals and

Interferences reverse the rejections previously entered by the Examiner.

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VIII. CLAIMS APPENDIX

1. A fluid control valve, comprising:

   a. a truncated cone, having a first end and a second end, wherein said first end is larger than said second end;

   b. a retaining groove, proximate said first end of said truncated cone;

   c. a fluid groove, between said retaining groove and said second end of said truncated cone;

   d. a fluid manifold inside said truncated cone;

   e. a conduit connecting said fluid manifold and said fluid groove; and

   f. a hollow elastic cylinder, having a first end and a second end, and being sized to fit tightly over said truncated cone, wherein said first end lies tightly within said retaining groove and wherein said second end lies tightly against said second end of said truncated cone, thereby forming an annular nozzle between said hollow elastic cylinder and said truncated cone.

2. A fluid control valve as recited in claim 1, further comprising a connector, proximate said first end of said truncated cone, for connecting said fluid control valve to a fluid source.

3. A fluid control valve as recited in claim 2, further comprising a second connector, proximate said second end of said truncated cone, for connecting said fluid control valve to a fluid circuit.

4. A fluid control valve as recited in claim 1, wherein said conduit is a hole between said fluid manifold and said fluid groove.

5. A fluid control valve as recited in claim 1, wherein said conduit is a plurality of holes between said fluid manifold and said fluid groove.

6. A fluid control valve as recited in claim 1, wherein said elastic cylinder is made from a material capable of withstanding high temperatures.

7. A fluid control valve as recited in claim 1, wherein said elastic cylinder made from a very elastic material so that it can be manually placed over said truncated cone.

8. A fluid control valve as recited in claim 2, wherein said connector includes a thread.

9. A fluid control valve as recited in claim 3, wherein said connector includes a thread and said second connector includes a thread.

10. A fluid control valve as recited in claim 6, wherein said elastic cylinder is made of spring steel.

11. A fluid control valve as recited in claim 7, wherein said elastic cylinder is made of vinyl.

IX. EVIDENCE APPENDIX

No evidence has been submitted pursuant to 37 CFR §§1.130, 1.131, or 1.132.

X. RELATED PROCEEDINGS APPENDIX

To the Applicant's knowledge, there are no related proceedings.